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MEDICAL EDUCATION DIGEST



VOLUME 17/NUMBER 5 • SEPTEMBER–OCTOBER 2015 • *Medical Education Highlights for Primary Health Care*

MEETING THE CHALLENGE OF BALANCING GERIATRICS TRAINING WITH RESIDENTS' DUTY HOURS

Teaching geriatrics to internal medicine residents is vital and challenging, increasing the need for residency programs to be developed to address the need without increasing the burden. Academic detailing facilitates efficient and effective teaching. Continuing medical education literature shows such detailing to be effective in altering physician care and improving patient outcomes. The least effective methods (e.g., didactic lectures and written materials), however, predominate teaching.

Medical University of South Carolina's Department of General Internal Medicine and Geriatrics is improving medical residents' knowledge, skills, attitudes, and behaviors regarding geriatric care through its project Aging Q3 (quality education, quality care, and quality of life). It includes 16 topics based on the Assessing Care of Vulnerable Elder (ACOVE) paradigm that focuses on educational and quality improvement efforts.

The internal medicine residency training program enrolls about 100 residents annually, including those in categorical, medicine-pediatrics (two residents per year), and medicine-psychiatry (two residents per year) combined training programs. Residents see patients at the university-based outpatient clinic and University Hospital. Since residents cannot always attend noon conferences, most efforts are placed on creating detailing sheets that can be used efficiently and effectively at the time of patient care—at the bedside or at the time of clinic checkout.

Detailing sheets are a one- or two-page summary of high-yield facts about ACOVE topics reflecting the learning objectives. The sheets include epidemiology, screening, evaluation, and recommendations for action, treatment, or referral, depending on ACOVE details. Several detailing sheets display algorithms for evaluating a target condition. The sheets can be reviewed in two to three minutes, reducing possible disruption of clinic flow or bedside teaching rounds.

Some skills are directly observed by the attending physician doing the academic detailing. Required skills include Timed Up and Go test, calculation of a fracture risk assessment tool



(FRAX), review of a discharge summary, and a fundoscopic exam. At patient registration, clinic staff identified patients age 65 and older, put information on a cue sheet with the registration materials, and then put the detailing sheets in the patient's room for resident review and action.

Attending physicians reviewed current ACOVE detailing sheets with residents. During rounds, attendings reviewed the detailing sheet with the inpatient residents. Residents are detailed once during the study period unless there were specific questions regarding their patient. The RE-AIM model (reach, effectiveness, adoption, implementation and maintenance) is used to measure process, effect, and outcomes of the learning objectives. Pre- and post-tests measure residents' knowledge and self-efficacy using three to six single-answer multiple choice questions, with

a passing score threshold of 67 to 80 percent, depending on the number of knowledge questions in the particular ACOVE. Self-efficacy is an important mediating factor between knowledge and behaviors, and such items use a four- or five-point Likert-type scale, with higher scores reflecting increasing levels of confidence.

Attendance for didactic sessions is monitored for faculty members, residents, and support staff members to confirm the level of participation. There are three-month interventions for each ACOVE issue, with resident attendance at Aging Q3 conferences at 33 percent. Confidence or self-efficacy is assessed on 7 of 11 completed ACOVEs.

With a growing population of older adults, the need for geriatric education is expanding while limits on resident duty hours increase. Academic detailing at the time of patient encounters enables efficient

Continued on the back page...



GAP YEAR PROGRAM IN DERMATOLOGY OFFICE BUILDS SKILLS FOR MEDICAL SCHOOL HOPEFULS

Prior to applying to medical school, many applicants take a gap year. Many such applicants are highly qualified premedical students with extensive research and volunteer experience. Louis Kuchnir, M.D., a practicing dermatologist, believes that the applicants could function very well as temporary employees in a dermatology practice. He developed a 14-month salaried gap year program for these students in his practice, where they also served as scribes for medical recordkeeping.

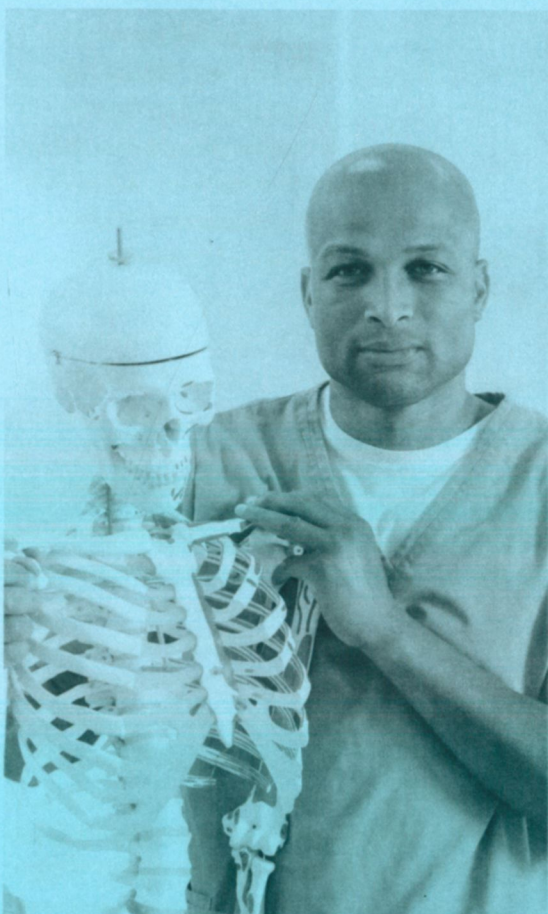
In the program, students make sure supplies are in order, sterilize instruments, and are taught to remove sutures and explain handouts or pamphlets to patients—actions that do not require a medical license. With this program, each employee works for 14 months and commits to helping with recruitment, hiring, orientation, and training his or her successors. The 14-month overlap happens in June and July, so new coordinators shadow the old ones before leaving for medical school. Teaching and lectures on subjects from biology to ethics are provided.

A national search for candidates takes place at college campuses, with recruitment and interviews of prospective hires occurring in January and February, followed by hiring in March. The students share their medical school letters of reference, their MCAT scores, and GPAs. Resumes are given to other dermatologists who wish to start or continue a similar program.

In 2014-15, Kuchnir had 10 applicants in his practice, while 8 others worked in practices elsewhere—mostly in Massachusetts. Many of the others will get hired by other dermatologists. In 2014, 102 applicants were interviewed on seven college campuses. Over the years, the number of applicants has increased because gap years have become popular with both students and medical schools. Alumni of the program now in their first, second, and third years of medical school say they are better able to take advantage of learning opportunities in medical school after having had the experience.

(Houghton V. Filling the gap. Dermatology World. American Academy of Dermatology; July 2015).

FOCUS ON NONCOGNITIVE ADMISSION CRITERIA IMPROVES INCLUSION OF UNDERREPRESENTED ETHNIC MINORITY GROUPS IN MEDICAL SCHOOL



A University of New Mexico School of Medicine study evaluated the impact of varying the relative weights of cognitive versus noncognitive admission criteria on the proportion of underrepresented minorities admitted to medical school. The study focused on the efficacy of increasing the admission rates of underrepresented minority (URM) students by balancing cognitive criteria with the experiences, attributes, and metrics of noncognitive data in the admission process.

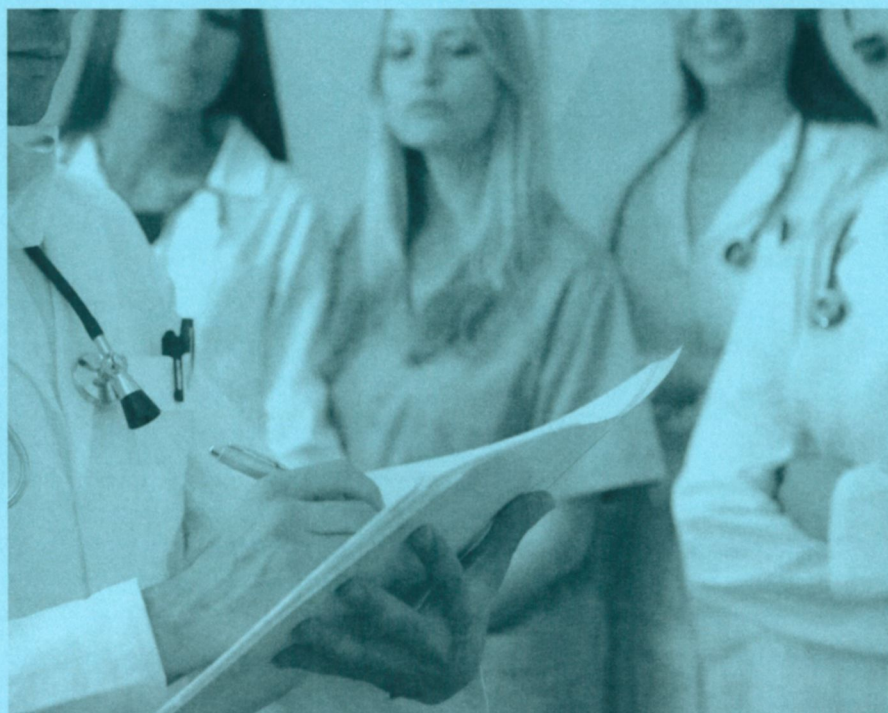
Demographics in the United States are shifting, and by 2042, ethnic minority groups will make up approximately 50 percent of the population. Increasing diversity of the U.S. population foreshadows the need to increase the number of physicians from underrepresented minority groups to help address rising health care disparities. Three consecutive medical school applicant classes (2007–2009) were used to model the impact on URM admission rates, as the relative weights of cognitive and noncognitive admission criteria were varied. Cognitive criteria included Medical College Admission Test (MCAT) scores and grade-point averages. Noncognitive criteria included four categories: background and diversity, interest and suitability for a career

in medicine, problem-solving and communication skills, and letters of recommendation. The study included 480 applicants from the three applicant classes that enrolled 75 students annually. The medical school admission process restricts admission consideration to applicants from New Mexico. Initial applications to the American Medical College Application Service were prescreened based on state residency, a minimum MCAT score of 22 or higher, a minimum undergraduate GPA (UGPA) of 3.0 or higher, and fulfillment of the prerequisite coursework.

Those meeting the screening criteria were invited to complete a secondary application and to participate in two personal interviews by admissions committee members. Admission decisions were made based on cognitive criteria, noncognitive scores from the interviews, and review scores from the entire admissions committee membership. Applicants to each class included 30 percent URMs (Hispanic, Native American, or African American) and at least 50 percent women.

(Marlene P. Ballejosa MP, Rhynea RL, and Parkes J. Increasing the relative weight of noncognitive admission criteria improves underrepresented minority admission rates to medical school. Teaching and Learning in Medicine: an International Journal. 27 (2); 2015).

ANALYSIS OF MCAT SCORES EXAMINES SUCCESS OBTAINED WITH STANDARD VS. EXTRA ADMINISTRATION TIME



Acceptance rates to medical school were not significantly different for applicants who had Medical College Admission Test (MCAT) scores obtained with standard vs. extra time. Students given extra time, however, passed the Sixth Term Examination Paper (STEP) examinations on first attempt at significantly lower rates and also graduated from medical school at significantly lower rates at different times. This raises questions about the types of learning environments and support systems needed by students given extra time on the MCAT to enable them to succeed in medical school.

Individuals with documented impairments—mental disabilities (e.g., learning disabilities, attention-deficit disorder or attention-deficit/hyperactivity disorder, psychiatric disorders) or physical disabilities (e.g., impairments related to vision, mobility, hearing)—may receive testing accommodations on the MCAT in accordance with professional testing standards and federal law. Examples of accommodations include presentation of testing materials in large print, extra testing time, a separate testing room, or authorization to bring an inhaler into the testing room. Ideally, testing accommodations are unrelated to the knowledge and skills being assessed by a test. Extra time is a common accommodation for a variety of disabilities.

For the 2011-13 entering classes, applicants to 140 M.D.-granting medical schools in the United States were assessed in order to examine acceptance rates reflecting

Continued on the back page...

KAISER-PERMANENTE SUPPORTS DIVERSIFIED GRADUATE MEDICAL EDUCATION

Kaiser-Permanente (KP), the largest private group practice of physicians in the nation (with 17,000 physicians), describes its health care system as being at the intersection of private practice and public health. KP's leadership refers to the current era as the accountable care organization (ACO), with physician practice models shifting from the solo, independent practitioner to the physician who is part of a multispecialty group practice, or who is employed by a health care institution.

KP believes it is an integrated, population-based health care delivery system, able to explore the questions facing graduate medical education (GME). The questions include how well residents and fellows are being prepared for 21st century practice and what medical educators need to do to ensure that those in GME are equipped with competencies to succeed in organized delivery systems providing the best care to patients and the population.

Another question is whether GME is preparing graduates to be leaders of health system change and what knowledge, skills, and professional values are expected by large employers of physicians within an era of evolving requirements for hospitals, medical groups, health care systems, and ACOs.

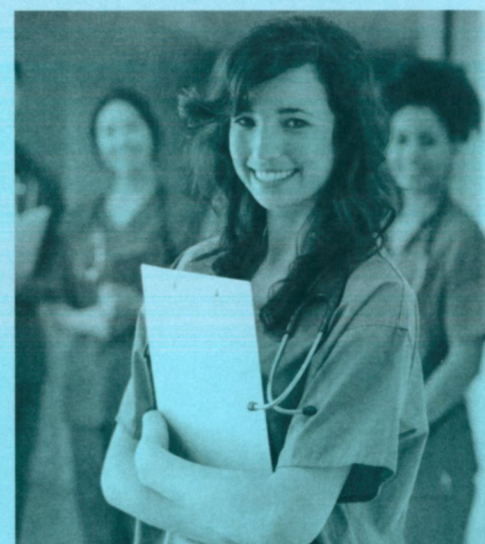
KP said physician education is a component of its mission, supporting 900 full-time equivalents of residents and fellows in more than 30 fields of training—including 3,000 individuals in its GME programs. It also indicates its priority for diversity with fewer whites (34 percent) and more Asians (44 percent) than reflected national averages, as well as slightly more African Americans (8 percent) and Latinos (6 percent); 50 percent are female.

KP also designates protected time for teaching at its sponsored sites, including those in community settings. Upon completion, 33 to 50 percent of KP residents join a Permanente medical group. In 2013, KP was ranked third in southern California and 10th in northern California in producing primary care graduates out of 161 programs with more than 200 graduates. Tracks include an M.P.H. degree in conjunction with the schools of public health at University of California Berkley and Los Angeles campuses—with the trainees' salaries and tuitions covered by the residency programs.

Having a large and diverse population, as well as a longitudinal electronic health record, provides an ideal environment for clinical and epidemiological research supported in 2013 by more than \$160 million in external grants and

about 1,200 active research projects. Over the past decade, this yielded over 400 peer-reviewed publications, with KP researchers being the first author. An additional priority of the KP residency programs is the emphasis that GME educators prepare residents for a life of continuous learning so they will grow from competency to mastery.

(Roemer BM, Azevedo T, and Blumberg B. Looking at graduate medical education through a different lens: a health care system's perspective. Academic Medicine. 90 (9); September 2015).

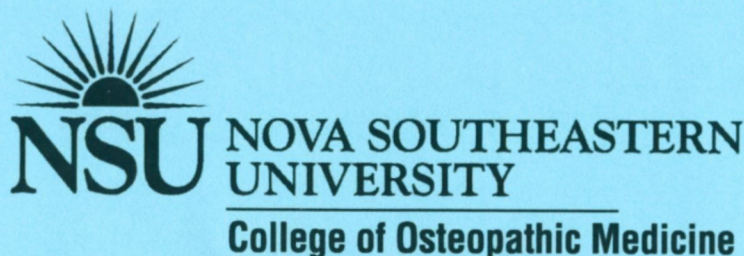


MEETING THE CHALLENGE...

and directed teaching of important topics without disrupting patient care. Barriers to implementation of these training programs include lack of good teachers and time constraints. Not all ACOVEs demonstrate improvement despite high detailing rates, and not all faculty members involved are experienced in writing test questions.

Detailing does not work equally well for all topics. ACOVEs with easily defined teaching points, such as osteoporosis (FRAX score) and skin ulcers (the Braden scale), are well suited for detailing. Conversely, in ACOVEs with more subjective topics, such as continuity of care, defining discrete and easily testable learning objectives is more difficult. The study was limited to a single center, with a small number of participants limiting overall generalizability. Additionally, there was no control group. Evaluation is limited to pre- and post-test results of knowledge and self-efficacy, but does not address patient outcomes. Many ACOVEs with the highest rates of resident detailing had statistically significant improvement in medical knowledge.

(Ducketta A, Cuocoa T, Pridea P, Wiley K, Iversona PJ, Marsdena J, Morana W, and Caton C. Academic detailing to teach aging and geriatrics. Gerontology & Geriatrics Education. 36 (4): 2015).



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ANALYSIS OF MCAT SCORES...

current admissions practices, MCAT test administration and accommodations procedures, extra-time conditions, and disability status of recent applicants. The MCAT total score was the sum of an individual's scores on the three multiple-choice sections of the MCAT from 1991 to January 2015: verbal reasoning, biological sciences, and physical sciences. As part of the MCAT accommodations determination process, individuals submitted information demonstrating functional impairment and past accommodations history.

Primary outcome measures were acceptance offers by U.S. medical schools and graduation within four or five years after matriculation. Secondary outcome measures were passing Step 1, Step 2 CK, and Step 2 CS on the first attempt, and eventually graduation within six to eight years after matriculation.

When analyzing graduation outcomes, excluded students enrolled in joint programs or other special programs typically required more than four years of study. The vast majority of these applicants took the MCAT within standard time. Applicants tested with extra time in 2011, 2012, or 2013 were accepted into medical school at a

rate of 43.9 percent (191/435), compared with 44.5 percent (59,585/133,962) of those tested with standard time.

Students who took the MCAT with extra time passed the United States Medical Licensing Examination (USMLE) STEP examinations on their initial attempt at significantly lower rates than students who took the MCAT within standard time. Medical students tested with extra time also graduated at significantly lower rates than students tested with standard time.

The study investigated the rate of admission to medical school, medical student performance, and time to graduation for individuals who took the MCAT with standard vs. extra administration time. Those individuals passed USMLE STEP examinations at lower rates on the first attempt and were less likely to graduate within four to eight years after matriculation compared with students who had MCAT scores obtained within standard time.

Research on the MCAT has shown that extra time is beneficial for most examinees. More research is needed to tailor the amount of extra time needed by individuals with disabilities who take the MCAT. Currently, it is common for individ-

uals with disabilities to receive 50 or 100 percent additional time on standardized examinations. The poorer performance on the USMLE STEP examinations, and the longer time needed to graduate from medical school for individuals who received extra testing time on the MCAT, suggests that medical schools examine their learning environments and support systems for individuals with disabilities.

More research is needed to understand the interplay between type of disability and performance differences to improve the medical education process for such students. Among applicants to U.S. medical schools, those with MCAT scores obtained with extra test administration time, compared with standard administration time, had no significant difference in rate of medical school admission, but had lower rates of passing the USMLE STEP examinations and of medical school graduation within four to eight years after matriculation.

(Searcy CA, Dowd KW, Hughes MG, Sean Baldwin S, and Pigg T. Association of MCAT scores obtained with standard vs. extra administration time with medical school admission, medical student performance, and time to graduation. JAMA. 313(22):2253-2262; 2015).

Continuing Medical Education Credit Form/September-October 2015

One (1) hour of continuing medical education credit may be obtained by reading the *Medical Education Digest* and completing the following evaluation that is being used to assess the reader's understanding of the content. Please circle the answers you believe to be correct for all four questions located on this two-sided form. To acquire CME credit, physicians must mail, fax, or deliver the form (also available online at <http://medicine.nova.edu>), including both the completed quiz and evaluation form by **October 15, 2015** to: Office of Education, Planning, and Research, Nova Southeastern University College of Osteopathic Medicine, 3200 South University Drive, Fort Lauderdale, Florida 33328. Email: lspeiser@nova.edu; Fax: (954) 262-3536. **Please complete and return the evaluation form attached on the reverse side by fax or email.**

AOA or AMA No. _____ Print Full Name _____

The correct answers will be published in the next issue of the *Medical Education Digest*.

1. *Among applicants to U.S. medical schools, those with MCAT scores obtained with extra test administration time:*
 - a. Had no significant difference in rate of medical school admission
 - b. Had a higher rate of admission to medical schools
 - c. Had higher rates of passing the USMLE STEP 1, 2, and 3 examinations
 - d. Had higher rates of graduation from medical school
2. *By 2042, ethnic minority groups will make up approximately:*
 - a. 25 percent of the population
 - b. 35 percent of the population
 - c. 50 percent of the population
 - d. 65 percent of the population
3. *The largest physician private group practice in the United States is:*
 - a. Cleveland Clinic
 - b. Mayo Clinic
 - c. Scott & White Memorial Hospital
 - d. Kaiser-Permanente
4. *The University of South Carolina Department of Internal Medicine and Geriatrics is improving the knowledge, skills, attitudes, and behaviors of its 100 residents regarding geriatric care by employing:*
 - a. The Assessing Care of Vulnerable Elder (ACOVE) paradigm
 - b. Utilization of Multiple Objective Structured Clinical Examinations (OSCEs)
 - c. A combination of OSCEs with Problem-Based Learning (PBL)
 - d. A designated high-level of performance on the USMLE STEP 3

Answers to the July/August 2015 CME questions: 1. (C) 2. (C) 3. (D) 4. (A)

Target Audience and Objectives

The target audience includes physicians who have faculty appointments at a medical school or who train residents and fellows in hospital-based environments. It also is for non-physician faculty members who have the responsibility for teaching medical students and others who seek education in the continuum of medical education (e.g., residency, continuing education). Also, since residents are typically responsible during their training to train medical students, they too are part of the audience to which the *Medical Education Digest* is directed.

- To provide an overview from the world literature of medical education knowledge, concepts, and skills of contemporary, new, and innovative ways to facilitate learning among medical students, residents, and practicing physicians
- To identify sources of information regarding the medical education process
- To create curiosity among those responsible for the medical education process to read in depth some of those articles that are summarized in the *Medical Education Digest*.

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In a continuing effort to fulfill your professional interests and to improve the educational quality of continuing education, please complete this form. Please darken bubble ☐

1) Your field / degree: ☐ MD ☐ DO/AOA # _____

- | | Strongly
Agree | Agree | Neither
Agree Nor
Disagree | Disagree | Strongly
Disagree |
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| 2) Reading this issue of Medical Education Digest has influenced the way that I will treat future patients. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3) The contents of this issue will be useful in my practice. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
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| <input type="radio"/> Phone <input type="radio"/> Email <input type="radio"/> Correspondence <input type="radio"/> Other _____ | | | | | |

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